CLAIMS

1. A method of failure avoidance when synchronizing a transceiver end and a receiver end by means of transmitted sequence numbers, each sequence number not necessarily being further error protected, the method characterized in that a received sequence number considered erroneous according to a predetermined criterion is disregarded.

2. The method according to claim 1 characterized in that the criterion comprises arranging of sequence numbers according to their time of arrival and purging of received sequence numbers not being within a prediction interval as determined from earlier received and non-purged one or more sequence numbers and number of one or more transmission time intervals with no data received between consecutively received sequence numbers.

3. The method according to claim 2 characterized in that the transmission time intervals are weighted by the maximum number of transmission blocks of the transport format.

4. The method according to claim 3 characterized in that an integer is added to the weighted number of transmission intervals.

5. The method according to any of claims 2–4 characterized in that a received sequence number being greater than an estimated greatest sequence number allowed is disregarded.

6. The method according to any of claims 2–4 characterized in that a received sequence number not being greater than an estimated greatest sequence number allowed is not disregarded.

7. The method according to any of claims 1-6 characterized in that the purged sequence of sequence numbers is passed to updating of a hyper frame number.

8. The method according to claim 7 characterized in that the hyper frame number is updated according to a basic method.

9. The method according to claim 1 characterized in that the criterion comprises arranging of received sequence numbers according to their time of arrival and for each decision interval sequentially disregard each one of the received sequence numbers within a decision window comprising consecutively received sequence numbers.

10. The method according to claim 9 characterized in that the decision window spans over an integer number of consecutively received sequence numbers starting with the sequence number of the decision interval.

11. The method according to claim 9 or 10 characterized in that the decision window spans over an integer number of consecutively received sequence numbers starting with the sequence number of the most recently received sequence number.

12. The method according to any of claims 9-11 characterized in that the decision window spans over at least four consecutively received sequence numbers.

13. The method according to any of claims 9-12 characterized in that for each disregarded sequence number a candidate hyper frame updating is undertaken.

14. The method according to claim 13 c h a r a c t e r - i z e d i n that the candidate hyper frame updating is undertaken according to a basic method.

15. The method according to claim 13 or 14 c h a r a c - t e r i z e d i n that if, for any one disregarded sequence number within the decision window, the candidate hyper frame number updating results in a non-increased hyper frame number, no further sequence number is disregarded and no further candidate HFN updating is undertaken for the decision interval.

16. The method according to any of claims 13-15 c h a r - a c t e r i z e d i n that if, for any one disregarded sequence number within the decision window, the candidate hyper frame number updating results in a non-increased hyper frame number, the hyper frame number of the decision interval is set equal to the hyper frame number of the preceding decision interval.

17. The method according to any of claim 13 or 14 c h a r a c t e r i z e d i n that if, for all each one of the disregarded sequence numbers within the decision window, the candidate hyper frame number updating results in the same hyper frame number, this candidate hyper frame number is decided to be the hyper frame number of the decision interval.

18. The method according to any of claim 13 or 14 c h a r a c t e r i z e d i n that if, for all each one of the disregarded sequence numbers within the decision window, the candidate hyper frame number updating results in a hyper frame number increase, the hyper frame number of the decision interval is set equal to the hyper frame number of the preceding decision interval increased by one.

19. The method according to claims 8 or 14 characterized in that the basic method increases a hyper frame number if, when comparing two received sequence numbers, the most recent of the two sequence numbers is less than the other sequence number.

20. The method according to claim 19 characterized in that the comparison is made modulo an integer, the integer being equal to the cycle length of transmitted sequence numbers.

21. The method according to any of claims 1-20 characterized in that it is a method of avoiding cipher synchronization failure.

22. The method according to any of claims 1-21 characterized in that it allows for reduction of redundancy being added to payload.

23. An element for receiving one or more transmitted sequence numbers synchronizing to a transceiver end by means of the transmitted sequence numbers, each sequence number not necessarily being further error protected, the element characterized by processing means for disregarding one or more sequence numbers considered erroneous.

24. The element according to claim 23 characterized in that the processing means disregards sequence numbers in accordance with the method in any of claims 1-22.

25. An element for receiving one or more transmitted sequence numbers each sequence number not necessarily being further error protected, the element characterized by prediction means for prediction of a most recent sequence number from one or more earlier sequence numbers and comparison means for comparing the predicted se-

quence number with a received counterpart and for conditionally disregarding the received sequence number being the prediction counterpart.

26. The element according to claim 25 characterized by the comparison means conditionally disregarding the received sequence number being the prediction counterpart if it exceeds a threshold value.

27. A radio communications system characterized by means for carrying out the method in any of claims 1-22.

28. A radio communications system characterized by one or more elements according to any of claims 23-26.